

## WHAT IS CLAIMED IS:

1. An adjustable arc spray nozzle connectable with a source of pressurized fluid for providing a spray pattern radially disposed about the nozzle, the nozzle comprising:

5 a top member having a plurality of elongated pegs extending axially from the top member;

a base member connected to the top member, the base member having a threaded outer portion, a discharge orifice being formed in a discharge plane between the top member and the base member, and the top member and base member being connected by the plurality of pegs of the top member;

10 means mounted on the top member for controlling the radius of the pattern;

an internal helix member for controlling the arc of the spray pattern of the nozzle, the internal helix member being inserted into the top member, the internal helix member having an internal threaded channel, and the internal helix member  
15 having a surface defining a plurality of apertures for receiving the plurality of pegs of the top member such that the internal helix member located does not rotate with respect to the top member and the base member, the internal helix member having a helically configured surface extending about the circumference of the internal helix member, whereby as the internal helix member is moved downwardly the arc of the spray  
20 pattern of the nozzle increases, and as the internal helix member is moved upwardly the arc of the spray pattern of the nozzle decreases; and

an internal flow adjustment screw for controlling the flow of the nozzle, the internal flow adjustment screw extending axially through the internal threaded channel of the internal helix member between the top member and base member,

25 whereby upon rotation of the internal flow adjustment screw the internal helix member moves axially in the internal portion of the assembly to control the flow of water through the discharge orifice of the nozzle proportional to the arc of the spray pattern.

2. The adjustable arc spray nozzle of Claim 1, wherein the means mounted on the top member for controlling the radius of the pattern comprises a rotatable external upper collar, the external upper collar being threadedly connected to a threaded outer portion of the top member.

3. The adjustable arc spray nozzle of Claim 1, further comprising a rotatable external lower collar for controlling the flow of the nozzle, the rotatable external lower collar being threadedly connected to a threaded outer portion of the base member.

4. The adjustable arc spray nozzle of Claim 1, wherein the pegs of the top member include a plurality of stepped sections cooperating with the corresponding apertures in the internal helix member, such that axial movement of the internal helix member controls flow through the discharge orifice proportional to the arc of the spray pattern.

5. The adjustable arc spray nozzle of Claim 2, wherein the top member includes an outer portion having marks that coincide with a corresponding mark on the external upper collar to show preset radius positions.

6. The adjustable arc spray nozzle of Claim 1, wherein the top member and the base member have surfaces together defining a plurality of mating slots at the

discharge plane.

7. The adjustable arc spray nozzle of Claim 3, wherein the outer portion of the base member includes a plurality of marks to coincide with a corresponding mark on the external lower collar to indicate a preset flow.

8. The adjustable arc spray nozzle of Claim 2, wherein the external upper collar has a bottom side with a splash plate portion on the bottom side that is slightly above the discharge plane.

9. The adjustable arc spray nozzle of Claim 8, wherein by movement of the external upper collar in a downward direction the splash plate interferes with the discharge plane, causing a breakup action of the discharge of water from the discharge orifice.

10. The adjustable arc spray nozzle of Claim 2, wherein the radius of the pattern can be reduced by downward movement of the external upper collar, and the radius of the pattern can be increased by upward movement of the external upper collar.

11. The adjustable arc spray nozzle of Claim 2, wherein a lower portion of the top member includes a detent which engages a helical surface on an upper lip portion of the external upper collar, the helical surface on the upper lip portion of the external upper collar having a plurality of grooves permitting periodic location of the detent of the top member, thereby effecting a ratchet type action and holding the external upper collar in position after being set.

12. The adjustable arc spray nozzle of Claim 3, wherein the external lower collar can be rotated moving in an upward direction that will cover the discharge of the discharge orifice or slot thereby controlling the amount water to be discharged.

13. The adjustable arc spray nozzle of Claim 3, wherein an upper surface of the base member includes a detent which engages a helical surface on a lower portion of the external lower collar, the helical surface on the lower portion of the external lower collar including a plurality of grooves permitting periodic location of the detent of the base member, thereby effecting a ratchet type action and holding the external lower collar in position after being set.

14. The adjustable arc spray nozzle of Claim 1, wherein the internal helix member has a plurality of incremental steps extending about the circumference of the internal helix member, whereby as the internal helix member is moved downwardly each incremental step a corresponding slot between the top member and the base member is opened, and as the internal helix member is moved upwardly each incremental step a corresponding slot between the top member and the base member is closed, to control the arc of the spray pattern of the nozzle.

15. The adjustable arc spray nozzle of Claim 1, wherein the internal flow adjustment screw has an upper end with a flange received in a corresponding slot in the top member, and the internal flow adjustment screw has a bottom end captured in the base member, such that the internal flow adjustment screw controls the size of the discharge orifice when the top member and the base member are assembled.

16. An adjustable arc spray nozzle connectable with a source of

pressurized fluid for providing a spray pattern radially disposed about the nozzle, the nozzle comprising:

5 a top member having a threaded outer portion and a plurality of elongated  
pegs extending axially from the top member;

a base member connected to the top member, the base member having a threaded outer portion, a discharge orifice being formed in a discharge plane between the top member and the base member;

10 a rotatable external upper collar for controlling the radius of the pattern,  
the external upper collar being threadedly connected to the threaded outer portion of the top member;

a rotatable external lower collar for controlling the flow of the nozzle, the rotatable external lower collar being threadedly connected to the threaded outer portion of the base;

15 an internal helix member for controlling the arc of the spray pattern of the nozzle, the internal helix member being inserted into the top member, the internal helix member having an internal threaded channel, and the internal helix member having a surface defining a plurality of apertures receiving the plurality of pegs of the top member such that the internal helix member located does not rotate with respect to  
20 the top member and the base member, the internal helix member having a helically configured surface extending about the circumference of the internal helix member, whereby as the internal helix member is moved downwardly the arc of the spray pattern of the nozzle increases, and as the internal helix member is moved upwardly the arc of the spray pattern of the nozzle decreases; and

25 an internal flow adjustment screw for controlling the flow of the nozzle, the internal flow adjustment screw extending axially through the internal threaded channel of the internal helix member between the top member and base member,

whereby upon rotation of the internal flow adjustment screw the internal helix member moves axially in the internal portion of the assembly to control the flow of water  
30 through the discharge orifice of the nozzle proportional to the arc of the spray pattern.

17. The adjustable arc spray nozzle of Claim 16, wherein the pegs of the top member include a plurality of stepped sections cooperating with the corresponding apertures in the internal helix member, such that axial movement of the internal helix member controls flow through the discharge orifice proportional to the arc of the spray pattern.

18. The adjustable arc spray nozzle of Claim 16, wherein the top member includes an outer portion having marks that coincide with a corresponding mark on the upper collar to show preset radius positions.

19. The adjustable arc spray nozzle of Claim 16, wherein the top member and the base member have surfaces together defining a plurality of mating slots at the discharge plane.

20. The adjustable arc spray nozzle of Claim 16, wherein the outer portion of the base member includes a plurality of marks to coincide with a corresponding mark on the lower collar to indicate a preset flow.

21. The adjustable arc spray nozzle of Claim 16, wherein the external upper collar has a bottom side with a splash plate portion on the bottom side that is slightly above the discharge plane.

22. The adjustable arc spray nozzle of Claim 21, wherein by movement of the external upper collar in a downward direction the splash plate portion interferes with the discharge plane, causing a breakup action of the discharge of water from the discharge orifice.

23. The adjustable arc spray nozzle of Claim 16, wherein the radius of the pattern can be reduced by downward movement of the external upper collar, and the radius of the pattern can be increased by upward movement of the external upper collar.

24. The adjustable arc spray nozzle of Claim 16, wherein a lower portion of the top member includes a detent which engages a helical surface on an upper lip portion of the external upper collar, the helical surface on the upper lip portion of the external upper collar having a plurality of grooves permitting periodic location of the detent of the top member, thereby effecting a ratchet type action and holding the external upper collar in position after being set.

25. The adjustable arc spray nozzle of Claim 16, wherein the external lower collar can be rotated moving in an upward direction that will cover the discharge of the discharge orifice or slot thereby controlling the amount water to be discharged.

26. The adjustable arc spray nozzle of Claim 16, wherein an upper surface of the base member includes a detent which engages a helical surface on a lower portion of the external lower collar, the helical surface on the lower portion of the external lower collar including a plurality of grooves permitting periodic location of the detent of the base member, thereby effecting a ratchet type action and holding the



external lower collar in position after being set.

27. The adjustable arc spray nozzle of Claim 16, wherein the internal helix member has a plurality of incremental steps extending about the circumference of the internal helix member, whereby as the internal helix member is moved downwardly each incremental step a corresponding slot between the top member and the base member is opened, and as the internal helix member is moved upwardly each incremental step a corresponding slot between the top member and the base member is closed, to control the arc of the spray pattern of the nozzle.

28. The adjustable arc spray nozzle of Claim 16, wherein the internal flow adjustment screw has an upper end with a flange received in a corresponding slot in the top member, and the internal flow adjustment screw has a bottom end captured in the base member, and the pegs include a plurality of stepped sections cooperating with the corresponding apertures in the internal helix member, such that the internal flow adjustment screw controls the size of the discharge orifice, and axial movement of the internal helix member controls flow through the discharge orifice proportional to the arc of the spray pattern, when the top member and the base member are assembled.